

The Legacy of Ilan Ramon in Israeli Society

Research Thesis

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by

Gabrielle Lyle

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Project Advisor: Professor Christopher Otter, Department of History

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Introduction

The success of the State of Israel over the last seventy years has in part stemmed from the nation's scientifically driven identity. Israel's scientific mindset goes back to the days of the first Jewish settlers arriving in Palestine in the nineteenth century. The survival of the society that they were striving to create rested on their ability to develop ways of cultivating the land's harsh soil and clearing away the malaria-filled swamps that claimed the lives of many of their loved ones. The emerging Israeli society came to value progress in all fields of science and technology from medicine to aeronautical engineering to nuclear power. While Israel was engaging in work in a large variety of areas, like many other states it became intrigued with space exploration. In the 1980s the Israel Space Agency (ISA) was formed and almost immediately Israel began working with the United States to design various experiments to be conducted in orbit. In the following decade, the two nations decided to take their partnership a step further with the announcement that an Israeli astronaut would visit interplanetary space for the first time on one of the National Aeronautics and Space Administration (NASA)'s upcoming missions.¹ The following year, Israel selected the highly skilled air force colonel, Ilan Ramon to be the first Israeli astronaut.

Excitement is a common way for a nation to feel upon the announcement that one of their countrymen will be becoming an astronaut for the first time, for it is a thrilling event does not happen every day. The enthusiasm felt by Israelis following Ramon's selection stems from more than just the typical specialness of a nation's first trip into space. For Israel, the announcement that an Israeli was going to the stars offered the country an escape from its dire geopolitical situation, which is what the government was likely hoping for. In the years leading up to the

¹ Michael Cabbage and William Harwood, *Comm Check... The Final Flight of Shuttle Columbia*, 27-29

decision, Israelis had experienced what would come to be known as the First Intifada and had witnessed their prime minister, Yitzchak Rabin assassinated at a peace rally, which led to the collapse to what many felt was the beginning stages of peace with the Palestinians. Even following the announcement, Israel found itself facing many perils throughout the late 1990s and early 2000s as the Second Intifada erupted.

During the course of Ramon's training for his upcoming NASA mission, the Israeli media constantly gave updates on his status. Such an action worked in a way to remind the Israeli public of Ramon's activities. It is likely that had it not been for the press's efforts to carefully document the astronaut's journey, Israel would not have paid as close attention to it until it drew much closer to the actual launch date as was the case in the United States regarding most shuttle missions by this time. This constant coverage caused many citizens in the State of Israel to feel a connection with Col. Ramon and his family as they felt they were given a window into their lives and watched them grow over the years. When the day of the launch finally came in January 2003, the news anchors began their broadcasts exclaiming how the news was positive for once while newspapers proudly featured Ramon's official NASA portrait on their front pages. It would have been difficult to escape the news discussing Ramon's activities on board the space shuttle Columbia during its two-week mission.

When Columbia began to make its reentry into Earth's atmosphere on February 1, 2003, countless Israelis excitedly watched with the assumption that they would soon be celebrating the return of their country's first astronaut. However, less than twenty minutes before the shuttle was due to land in Florida, it exploded over Texas killing its entire crew, including Ramon, leaving an emotional blow to the country who had had the mission's importance built up for them in the years preceding the launch. In the coming months, the Israeli media, as well as Jewish media in

the Diaspora, released articles after articles about how Ramon's death was a devastating loss for Israel and Jewish people across the world. However, while Ramon's untimely demise has been a source of heartache for many, the goal of preserving his memory has had some positive consequences for Israel as organizations such as the Ramon Foundation and the Israel Space Agency have worked tirelessly to get more Israeli youths motivated to pursue all kinds of careers in science.

Chapter I: The Background of Scientific Innovation in Israel

The story of Ilan Ramon's legacy begins long before his birth in Tel Aviv in 1954, but rather with the arrival of the first Jewish settlers to Palestine.² Science has been fundamental to the establishment and continued survival of the State of Israel since the days when it existed only in the dreams of the first Zionist thinkers. The minds of the Zionist thinkers such as Theodor Herzl understood that in order to make their dream of the Jews returning to the Land of Israel a reality they would have to take significant steps to revitalize the land. When the first pioneers began immigrating to Palestine in the latter half of the nineteenth century the land was quite desolate and filled with diseases.³ The Arab residents who often worked as tenant farmers had preferred to work the lands in hilly regions, which tended to be more nutrient-rich and free of disease.⁴ It was not always an option to buy that land depending on who exactly owned it and the condition of the remaining land seemed so hopeless that many of the first pioneers to Palestine actually returned to their European homelands.⁵ Some of the immigrants did not back away from

² "ILAN RAMON (COLONEL, ISRAEL AIR FORCE) PAYLOAD SPECIALIST," NASA, <https://www.jsc.nasa.gov/Bios/PS/ramon.html>.

³ Arnold Sherman and Paul Hirschhorn, *Israel high technology* (Jerusalem, Israel: La Semana Pub. Co., 1985), 19-20

⁴ Anita Shapira, *Israel: a history* (London: Weidenfeld & Nicolson, 2015), 37

⁵ *Ibid.*, 32-33

the challenge, however, and over the next several decades leading up to the founding of the State of Israel, they worked hard to create the building blocks of a thriving society.

The early pioneers realized that agriculture was the key to making the Jewish state a reality, for few societies can be successful without an agricultural sector. Developing the agricultural industry would also provide a way to boost the economy of the emerging society. Many of these early pioneers, however, had not been involved with agriculture before they made *aliyah*, the Hebrew term for immigrating to the Land of Israel, so they had to learn quickly. These first years were marked by intense hardship. Not only was the land less than ideal for many crops that the settlers wished to cultivate, but many of them lacked the agricultural background initially to figure out potential solutions to the problem.⁶ They understood though that it was possible to learn the ways of the land with practice and education. Over the next few decades, Jewish settlers would train themselves for agricultural work in various ways such as by traveling to agricultural schools in Europe or by helping to open schools in the Land of Israel. It is important to understand that while the future of a growing Jewish community in the Land of Israel depended on the success of the rural agricultural communities, there was another motivation for working to become successful farmers: anti-Semitism in Europe. One of the prominent anti-Semitic notions of the time, which was also popular among Enlightenment thinkers was that in economic terms Jews were unproductive and it would be better for them to shift towards agricultural occupations rather than ones based in commerce.⁷ The Zionist settlers wanted to prove wrong the stereotype of Jews as economically unproductive.

⁶ *Ibid.*, 40

⁷ Derek Jonathan Penslar, *Zionism and technocracy: the engineering of Jewish settlement in Palestine, 1870-1918*(Bloomington: Indiana University Press, 1991). 7

In the 1870s, many philanthropic French Jews began funding the efforts of settlers in Palestine to learn conventional farming techniques by establishing vocational schools.⁸ The first of these schools was Mikve Yisra'el, which was created by the Alliance Israélite Universelle (AIU).⁹ The AIU was a French organization founded in 1860 in order to promote solidarity amongst world Jewry, and it strived to aid Jews in crisis across the globe.¹⁰ It was not a Zionist organization per se; it was simply a Jewish organization. To AIU the establishment of Mikve Yisra'el was simply another way of aiding fellow Jews in need. Schools such as Mikve Yisra'el proved to be very helpful in educating the younger settlers to produce agricultural products such as citrus fruits, which began to flourish.¹¹ Nonetheless, many of the settlers of the First Aliyah found themselves unable to handle the stress of the pioneer life and thus returned to Europe. However, a new wave of young immigrants with a more deeply ingrained notion of the laborer arrived at the turn of the twentieth century and increased agricultural development.¹²

The start of the new century saw settlers to the Land of Israel who were able to withstand the tests of the land in higher numbers. The Jewish community, or *Yishuv*, was becoming much better-established in both rural and urban centers. More scientists were arriving in the land, such as Aaron Aaronsohn, Otto Warburg, and Isaac Elazari-Volcani, which proved to be quite beneficial for agricultural innovation. Aaronsohn, the head of one of the first agricultural research centers, was responsible for discovering wild wheat growing in the Upper Galilee, which enabled researchers such as himself to have a better understanding of the conditions needed to cultivate wheat.¹³ Wheat production is crucial for food supply, and all countries need

⁸ *Ibid.*, 7

⁹ *Ibid.*, 16-17

¹⁰ Alliance Israélite Universelle, "Appeal To All Israelites," in *The Jew in the modern world: a documentary history*, 3rd ed. (Oxford University Press, 2011).

¹¹ Shapira, *Israel: a history*, 41

¹² *Ibid.*, 46

¹³ Sherman and Hirschhorn, *Israel high technology*, 20

to have some kind of access to it. Warlburg and Elazari-Volcani rose to prominence in the 1910s conducting various experiments on their training farm in Ben-Shemen, and eventually, they would go on to found the Institute for Agricultural and Natural Sciences with the help of the Zionist Organization of America in 1921.¹⁴ Several universities also began to open their doors at this time as well including the Technion, which would go on to become one of the leading institutions of science and technology in Israel. The institution immediately began offering courses in agricultural engineering.¹⁵ Its research was studied intensely by members of Israel's numerous kibbutzim and was used in their fields to produce greater crop yields.¹⁶ In general, these kinds of organizations would prove valuable for Israeli society for years to come, for there are ways still in which the land could be more efficiently used.

It is important to keep in mind the role of collective memory and how it shaped their narrative about the Land of Israel when discussing the Zionists pioneers, specifically around the ancient fortress Masada. Following the Jewish revolt against the Romans in 70 C.E. and the fall of Jerusalem, Masada was the last outpost held by Jewish rebels.¹⁷ According to the Jewish historian Josephus who wrote the only known ancient account of the event when the fortress became besieged by the Romans, the Jewish men decided to kill their families and then themselves in order to avoid being captured by the Romans.¹⁸ The tale resonated with many of the Zionist pioneers as they felt that it was evidence of their people's connection to the land as well as believing that the message of "suicide before surrender" was one that they could stand behind.¹⁹ Due to this deep connection, Masada became a popular pilgrimage site despite its

¹⁴ *Ibid.*, 20

¹⁵ *Ibid.*, 20

¹⁶ *Ibid.*, 20-21

¹⁷ Yael Zerubavel, "The Fall of Masada," in *Recovered Roots* (Chicago, IL: University of Chicago Press, 1995), 60

¹⁸ *Ibid.*, 60-61

¹⁹ *Ibid.*, 68-69

isolated location in the desert though throughout the coming decades it became increasingly accessible.²⁰ The tragic elements have pretty much been erased from the memory of Masada and the story has been twisted to fit the desired narrative. As Yael Zerubavel explains, the event is actually sort of un-Jewish in nature given that religious texts emphasize the importance of preferring death over harming one's enemy whereas the common narrative around Masada is that the rebels had been fighting the Romans.²¹ However, Josephus actually makes no mention of whether or not there had been fighting between the Roman troops and Jewish rebels. The case of Masada shows how sometimes it is a more encouraging (even if it is also problematic) message that is taken out of tragic events in time rather it becoming solely a memory of sadness.

After the State of Israel was established in May 1948, the young country found its scientific curiosity expanding outside of its agricultural roots, which was important to do in order for the society to advance. It can be argued that scientific innovation is one of the key factors essential to the survival of the State of Israel. Throughout much of its existence, Israel has found itself either in a state of war or on the brink of war, which has greatly influenced the country's innovative needs. For example, Israel's first prime minister, David Ben-Gurion along with his assistant Shimon Peres strongly believed that their young country needed to have a strong presence in the sky in order to maintain any significant defense superiority in such a hostile region.²² They contracted the American engineer, Al Schwimmer to head Bedek Aviation (later Israel Aircraft Industries) and design aircraft to be used by the Israeli Air Force throughout the 1960s and 1970s.²³ The early designs were not as widely received as Schwimmer would have hoped for, but they nonetheless displayed Israel's determination to make its own technological

²⁰ *Ibid.*, 62-66

²¹ *Ibid.*, 74

²² Sherman and Hirschhorn, *Israel high technology*, 73

²³ *Ibid.*, 74-75

breakthroughs. Israel also throughout the 1970 and 1980s made several advancements in the field of medicine. This included some of the early work on developing artificial organs as well as artificial blood to minimize the risks related to blood transfusions.²⁴ Israelis researchers also looked into better understand why victims who have been crushed by debris are at such a high risk of kidney failure.²⁵ Medical advancements such as these were able to improve how doctors throughout the world treated their patients.

A state by no means has to be a leader in space exploration or even engage in space exploration to prove its tenacity for scientific innovation. France for one is a prime example of a world leader that does not possess a significant space program of its own, however, it has taken on various successful scientific and technological projects over the last century. To begin with, France is one of the leading countries in nuclear power both to fulfill their own energy needs and in the use of weapons.²⁶ As of 2016, 72 percent of France's energy needs, making it one of the few countries in the world that gets a majority of its power from nuclear power.^{27,28} The French also gained recognition made in their development of high-speed airplanes such as the Concorde, which while it was not a commercial success due to its tradeoffs for speed, it was viewed as quite the engineering achievement being able to travel from Paris to New York in three hours less than the average jet.²⁹ Michael Bess explains that all states are engaged in a sort of technological Darwinism in which states are constantly competing with each other to become as strong and

²⁴ *Ibid.*, 58

²⁵ Sherman and Hirschhorn, *Israel high technology*, 52-57

²⁶ Bess, "Nukes, Concordes, and Anxiety: The French "Special Relationship" with High Technology," in *The Light-Green Society* (Chicago, IL: University of Chicago Press, 2003). 13

²⁷ Francois De Beaupuy, "Can France Mix Nuclear and Renewable Power?" Bloomberg.com, January 31, 2018, , <https://www.bloomberg.com/news/articles/2018-01-31/french-energy-giant-seeks-survival-by-rewriting-nuclear-rules>.

²⁸ Harrison Jacobs, "The 17 Countries Generating The Most Nuclear Power," Business Insider, March 06, 2014, , <http://www.businessinsider.com/countries-generating-the-most-nuclear-energy-2014-3#2-france-16>.

²⁹ Bess, "Nukes, Concordes, and Anxiety: The French "Special Relationship" with High Technology," in *The Light-Green Society*, 25-26

independent as possible to avoid being dominated by others.³⁰ This idea of striving to be independent is one of the reasons that many countries choose to have space programs even if they are significantly smaller than NASA. It puts a state in charge of its own space-related activities such as the launching of satellites that it may use for a variety of purposes from defense, to navigation, to telecommunications. For countries such as France and Israel, this is one of their main focuses of their space programs.^{31,32} Their space agencies serve as a way to lessen their dependence on other states for their survival.

By the 1980s Israel was beginning to set its sights on exploring the famed “final frontier” that was space. In the early part of the decade the country established the Israel Space Agency, which is under the administration of the Ministry of Science, Technology, and Space.³³ While Israel was not as big of a player in the space industry as the United States or the Soviet Union, it was still one of the first countries in the world to launch its own satellites into space.³⁴ Space exploration was sought after by Israelis, and in a way, it really fit into the Zionist ideology of the early years. In his work, *The Jewish State*, Theodor Herzl discussed how a Jewish state must be settled “in accordance with scientific principles” in order to prevent logistical nightmares such as with the California Gold Rush.³⁵ To Herzl, the success of a Jewish state depended upon its commitment to scientific innovation. It must also be noted that part of the goal of Zionism was to make to the Jewish nation equal in the family of nations.³⁶ Given that space exploration is one of the ways in which a modern nation can prove its scientific capabilities, becoming more active in

³⁰ *Ibid.*, 18-19

³¹ "Cnes," About CNES, June 08, 2015, , <https://cnes.fr/en/web/CNES-en/3773-about-cnes.php>.

³² "About The Israel Space Agency," סוכנות החלל הישראלית , <http://www.space.gov.il/en/About>.

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ Theodor Herzl, *The Jewish State (Der Judenstaat)*, trans. Harry Zohn (New York, NY: Herzl Press, 1970)., 96

³⁶ Paul Mendes-Flohr and Jehuda Reinharz, "Proclamation of the State of Israel," in *The Jew in the Modern World: A Documentary History*, 3rd ed. (New York, NY: Oxford University Press, 2011).

this field provided a way to fulfill this goal. By working to develop a successful space program, Israel would be able to show that it was just as capable as any of the world's other nations.

However, Israel lacked the resources to develop a program that could even begin to come close to the scope of the American and Soviet programs. The former president of the Technion agreed with such a sentiment, but he did feel that Israel had to start doing some work in the field because the world as a whole was heading in that direction and Israel could not afford to fall behind.³⁷ It was during this period that the ISA and NASA first began working together. A project headed by Jacob Ishay, an entomologist at Tel Aviv University, was designed to look at the impact of zero-gravity on hornets in space in order to learn how to improve the well-being of astronauts in future space missions.³⁸ In the following decade, though, Israel would find itself longing for bigger opportunities when it came to exploring the heavens.

Chapter II: An Israeli Goes into Space

Ever since the launch of Sputnik in 1957 by the Soviet Union, many of the world's nations have been striving to make their name in the arena of space exploration. Space exploration has become one of the paths in which a nation can display its tenacity for scientific innovation, a quality that is very much valued in today's ever progressing world. This is not to say that space exploration is the only way for a nation to proclaim to the world its ability for scientific advancement. Not at all, for there are countless avenues for nations to engage in this such as France's research on the Concord.³⁹ France does not possess a big space program Space exploration is simply one way in which a nation may decide to display its potential in science. As a result, several nations have created their own space programs in recent years even if they do

³⁷ Sherman and Hirschhorn, *Israel high technology*, 219

³⁸ *Ibid.*, 218

³⁹ Bess, "Nukes, Concorde, and Anxiety: The French "Special Relationship" with High Technology," in *The Light-Green Society*, 11-37

not necessarily have the resources to do so. These programs typically do not make any major scientific discoveries, but they nonetheless provide a sense of pride for their countries. Two of the world's biggest space powers, Russia and the United States, have taken representatives from these nations as well as others on missions into space. This began as a Cold War technique when the Soviet Union was still in existence; it was aimed at gaining more allies around the world. This taking people from other countries into space has continued, however, since the end of the Cold War, because it provides the major powers with a way to gain and maintain relationships with other countries. The United States, for instance, in 1985 sent a member of the Saudi royal family, Sultan Salman Abdulaziz Al-Saud, on a flight with the crew of the shuttle Discovery when a communications satellite was being launched for his country.⁴⁰ These individuals are typically referred to as the "payload specialists", with some being more qualified than others.^{41, 42}

The United States has had a close relationship with the State of Israel since the latter's founding in 1948, and to many, it seemed only natural that one day one of these payload specialists would be from the Jewish state.⁴³ In 1995, Jeremy Issacharoff who was at the time working as a political counselor at the Israeli Embassy in the United States, one day took his young son to visit the National Air and Space Museum.⁴⁴ His child questioned his father about the lack of any Israeli astronauts while looking at a display about the shuttle program, which prompted Issacharoff to bring the idea up to the then Israeli ambassador, Itamar Rabinovich.⁴⁵ The ambassador liked the idea, and it was eventually approved by the United States and Israel,

⁴⁰ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*

⁴¹ Konstantin Kakaes, "International Collaborations in Space Always Reflect Politics on Earth," *Slate Magazine*, March 30, 2017, http://www.slate.com/articles/technology/future_tense/2017/03/a_brief_history_of_the_countries_that_send_people_to_space_and_why.html

⁴² Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*, 27

⁴³ *Ibid.*, 27

⁴⁴ *Ibid.*, 27

⁴⁵ *Ibid.*, 28

with their respective space agencies signing an official agreement in the following year. Unlike with previous missions involving payload specialists from other countries, there was a strong desire for this mission to be more scientifically focused, with the representative playing a crucial role. NASA and the ISA decided that during the mission they would run the Mediterranean Israeli Dust Experiment (MEIDEX), which had been proposed by Tel Aviv University.⁴⁶

The question remained as to who would be the one to represent the State of Israel in space. Israel had no shortage of people who wished to apply for the opportunity, but it did not have the resources to conduct an extensive nationwide search. Instead, the country opted for another approach to making its decision. The Israel Air Force (IAF) was told to select who it believed to be among its best while possessing some sort of background in science or engineering, so the payload specialist would have the know-how to conduct the MEIDEX.⁴⁷ In 1997 the IAF made their decision: Colonel Ilan Ramon. Ramon was the head of IAF's weapons development and acquisition, a skilled fighter pilot who had earned a degree in electronics and computer engineering from Tel Aviv University in 1987.^{48,49} During the course of his career in the IAF, Ramon had over 4,000 flight hours under his belt and had served as deputy squadron commander and later as squadron commander.⁵⁰ After serving as the squadron commander of the F-16 Squadron, he became the head of the Aircraft Branch in the Operations Requirement Department, where he remained until his promotion to colonel in 1994 and took a subsequent job in weapons development.⁵¹ His resume went above and beyond the qualifications that NASA and the ISA were looking for in a candidate. Ramon eagerly accepted the offer to become an

⁴⁶ *Ibid.*, 28-29

⁴⁷ *Ibid.*, 28-29

⁴⁸ *Ibid.*, 29

⁴⁹ Pearce Wright, "Obituary: Ilan Ramon," the *Guardian*, February 03, 2003, , <https://www.theguardian.com/science/2003/feb/03/spaceexploration>

⁵⁰ "ILAN RAMON (COLONEL, ISRAEL AIR FORCE) PAYLOAD SPECIALIST," NASA

⁵¹ *Ibid.*

astronaut once he realized it was serious and not just some joke. The prospect of an Israeli astronaut was so far from the country's mind that the term in Israel for astronaut was more commonly used to refer to someone with their head in the clouds and thus not something to be taken seriously, leading to Ramon believing some people were just playing a prank on him when he first received the call.⁵²

Ilan Ramon was already somewhat of a hero in Israel before he was selected to be its first astronaut because of his history in the air force. He had served in the Yom Kippur War in 1973, and eight years later took part in the bombing raids on the nuclear reactor that was being built in Baghdad.⁵³ Israel is a country that has been at war or on the verge of war since the day it was founded. This reality has caused Israel to develop a strong military because its ability to defend itself truly hinges a lot of the time on its success in the battlefield. The military plays a much more significant role in its citizens' lives than in most countries throughout the world. Most citizens of countries such as the United States possess at least a certain amount of respect for their armed forces and may know someone who serves, but in Israel, it is much different. Nearly everyone is drafted into the Israel Defense Force after they graduate from high school: for two years if they are female, and for three years if they are male.⁵⁴ Asking one where they served in the military is just as much an introductory question as asking where someone was born because it is such a shared experience. Exemplary military service is highly valued by most Israelis, so Ramon's outstanding record had put him in good standing with his fellow countrymen. After the Columbia disaster, his former colleagues explained that Ramon's service went beyond the public

⁵² Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*, 29

⁵³ Wright, "Obituary: Ilan Ramon,"

⁵⁴ "Military Service Age and Obligation," Central Intelligence Agency, , <https://www.cia.gov/library/publications/the-world-factbook/fields/2024.html>.

knowledge at the time and likely his complete resume will not be known for several years to come.⁵⁵

It is not uncommon for a country's first wave of astronauts to be widely celebrated no matter what the political situation in the country is at that moment. Take for instance, the United States during the 1960s when the space program was in its early days and only had a handful of astronauts. While not all of these early explorers are as commonly remembered today as others, some of maintained a deep place in the American consciousness over the decades. Figures such as John Glenn, Buzz Aldrin, and Neil Armstrong became household names during the course of their missions in space. Part of the reasons that these particular former astronauts have been widely remembered is because of their association with "firsts". Glenn was the first person to orbit Earth while Armstrong and Aldrin were the first two people to walk on the moon.^{56,57} Aldrin and Glenn continued to stay in the public spotlight following their careers at NASA undoubtedly keeping them in the minds of many Americans. Armstrong, on the other hand, opted to live a quiet life following his tenure in order to prevent casting a negative light on NASA if he ever were to get into trouble since he recognized that he was a representative of the space program to the public.⁵⁸

In a way, there were many parallels between Neil Armstrong and Ilan Ramon in particular. Both men had exemplary military service in the air force, both possessed backgrounds in engineering, both were notable firsts in space exploration, and both had a deep sense of humility for their position in the minds of their respective societies.⁵⁹ Armstrong's quiet lifestyle

⁵⁵ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*, 30-31

⁵⁶ NASA. <https://www.jsc.nasa.gov/Bios/htmlbios/glenn-j.html>.

⁵⁷ NASA. <https://www.jsc.nasa.gov/Bios/htmlbios/aldrin-b.html>.

⁵⁸ Hsu, Jeremy. "How Astronauts Can Become Media Stars." Space.com. March 19, 2010. <https://www.space.com/8067-astronauts-media-stars.html>.

⁵⁹ Dunbar, Brian. "Biography of Neil Armstrong." NASA. March 10, 2015. <https://www.nasa.gov/centers/glenn/about/bios/neilabio.html>.

following his NASA years in order to preserve the agency's integrity and decision not to pursue a political career as was the case with some of his contemporaries earned him a great deal of respect from journalists.⁶⁰ It is likely that taking up politics could have been an easy career move for Armstrong given his name was well recognized and he was very much respected by the American public instead he opted for a career as an engineering professor.⁶¹ He did occasionally testify in front of the U.S. Congress about the importance of the government continuing to fund space exploration, but for the most part, he stayed away from the public's eye.⁶² Similarly, as will be explored later on, Ilan Ramon often acted very humble about his role as Israel's first astronaut and was quite aware that he was a representative of both Israel and world Jewry. While he was frequently giving interviews during his time at NASA, it is impossible to know how often he would have done so upon departing from the space agency, but he did not seem to desire a continued sense of fame. According to his family, Ramon hoped to spend his post-NASA advocating for science, technology, engineering, and mathematics (STEM) education, not too far off from Armstrong testifying for continued space exploration.⁶³

Ramon believed that one of the reasons that he was becoming an important figure in Israel leading up to his mission was not just not the fact that he was going to be its first astronaut, but also that his background was very symbolic of the country's background as a whole. His mother was a Holocaust survivor and his father had served in the Israeli War of Independence.⁶⁴ These events are considered to be crucial in the development of the identity of Israeli Jews as

⁶⁰ Megan Garber, "What Died With Neil Armstrong," the *Atlantic*, August 27, 2012, , <https://www.theatlantic.com/technology/archive/2012/08/what-died-with-neil-armstrong/261599/>.

⁶¹ Ned Potter, "Neil Armstrong Recalls Hair-Raising Apollo Moon Landing," ABC News, May 24, 2012, , <https://abcnews.go.com/Technology/neil-armstrong-rare-interview-frustrated-nasa-lacks-direction/story?id=16423267>.

⁶² *Ibid.*

⁶³ "קרן רמון ע"ש אילן ואסף רמון," The Ramon Foundation, , <http://ramonfoundation.org.il/>.

⁶⁴ Wright, "Obituary: Ilan Ramon,"

well as the identity of Jews living in the Diaspora. Zionism had already been a growing movement before the rise of Nazi Germany, but after the Holocaust and the death of six million Jews, more members of the Jewish community came to the conclusion that the only way to guarantee their freedom would be to establish their own state.⁶⁵ Two years after the end of the Holocaust, the United Nations voted to partition Mandate Palestine into two states-one Arab and one Jewish-in part as a solution to the refugee crisis in Europe and in part because of the guilt felt by the international community.⁶⁶ Roughly six months later Israel formally declared its independence, and the country almost immediately had war declared upon it by its Arab neighboring nations. Over the next several months Israel found itself locked in a conflict on all of its borders, which resulted in the death of one percent of its population.⁶⁷ One percent does not necessarily sound like that much, but it would be the equivalent of 3.2 million Americans being killed today. Such a traumatic loss would surely be felt throughout the country for decades to come.

With these cultural effects of the Holocaust and the Israeli War of Independence in mind, Ramon was a symbol of what the country had overcome, especially combined with his birth in the State of Israel. He himself once stated he was proof “for the whole Israeli people, that whatever we fought for and we’ve been going through in the last century, or maybe in the last two thousand years, is becoming true”.⁶⁸ Indeed, the hardships of the Jewish people go back way before the Holocaust as they have survived the Spanish Inquisition, the destruction of entire Jewish communities during the Crusades, and pogroms in the Russian Empire, just to name a

⁶⁵ Lloyd P. Gartner, *History of Jews in modern times* (New York: Oxford University Press, 2001). 380-382

⁶⁶ *Ibid.*, 390-393

⁶⁷ Mfa.gov.il, , <http://mfa.gov.il/MFA/AboutIsrael/History/Pages/Israels%20War%20of%20Independence%20-%201947%20-%201949.aspx>.

⁶⁸ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*, 31

few of the extreme acts of anti-Semitism committed throughout the centuries in Europe alone⁶⁹. The Holocaust in particular, though, had a significant impact on Ramon because of his mother's having survived Auschwitz. Many of his other family members from her side ended up dying in the camps.⁷⁰ Yad Vashem explained that Ramon contacted them before his shuttle mission asking if there was any artifact from the Holocaust that he could take with him into space with the museum, eventually selecting a drawing called "Moon Landscape" to accompany him.⁷¹ A fitting title for the journey that the picture was about to make. The drawing had been done by fourteen-year-old Petr Ginz in the Theresienstadt ghetto; to him, it represented a place where he could look at the Earth away from the horrors of Nazi Germany.⁷² Ginz himself did not survive the Holocaust.

"Moon Landscape" was not the only Holocaust-related item that Ilan Ramon chose to bring with him on the Columbia mission. A small Sefer Torah scroll also made the journey into space. Ramon had first come across the scroll when working on an experiment design for the mission with a colleague, physicist Joachim Joseph, a Holocaust survivor. Joseph had been giving the scroll in the Bergen-Belsen concentration camp by Rabbi Simon Dasberg following a secret Bar-Mitzvah ceremony for him.⁷³ Dasberg, who had been the Chief Rabbi of the Netherlands, believed that Joseph should take the scroll following the completion of the ceremony, for the boy stood a better chance at surviving than he did.⁷⁴ Joseph agreed to let Ramon take the scroll with him on his mission because he had promised Dasberg that he would

⁶⁹ Gartner, *History of Jews in modern times*, 1-25, 162-190

⁷⁰ "Special Exhibit in Honor of Israeli Astronaut Col. Ilan Ramon," February 5, 2003
<http://www.yadvashem.org/press-release/05-february-2003-07-55>.

⁷¹ *Ibid.*

⁷² *Ibid.*

⁷³ Debbi Wilgoren, "The Torah That Went From The Depths to the Heavens," The Washington Post, February 19, 2003, , https://www.washingtonpost.com/archive/lifestyle/2003/02/19/the-torah-that-went-from-the-depths-to-the-heavens/a2b2b2f5-5962-40ea-a2de-cbc44e578945/?utm_term=.29e1cfdefeec.

⁷⁴ *Ibid.*

share the scroll's story with the world. During the mission, Ramon shared the scroll's story with the world during a teleconference. He explained that it represented "more than anything the ability of the Jewish people to survive. From horrible periods, black days, to reach periods of hope and belief in the future."⁷⁵

Ilan Ramon did not just want to focus on the triumph of the Jewish people over the adversities of their past; he also wanted to celebrate Judaism as a whole. He understood that being the first Israeli astronaut was not just important to Israel, but also to Jews across the world. Now, he was by no means the first Jewish astronaut. Other Jewish astronauts, such as Judith Resnick, who perished on the Challenger, and David Wolf had already participated in the shuttle program.⁷⁶ However, no one had ever requested to have kosher food before Ramon. Ramon himself was a secular Jew who previously had not kept kosher, but he recognized the symbolism it held for many Jews across the world. Whether for the sake of tradition or because it is commanded in the Torah, Jews have kept kosher for centuries and the custom has become a distinguishing part of Jewish customs. While they may not necessarily be able to describe the specifics of kosher, many non-Jews in North America and Europe recognize that Jews have certain dietary restrictions. With this understanding in mind, Ramon elected to have kosher meals while on board Columbia, a request that NASA was able to accommodate using the same food producer that the United States military had been using to provide kosher meals to its observant Jewish troops.⁷⁷ Religious Jews were excited by Ramon's decision, stating "This is

⁷⁵ *Ibid.*

⁷⁶ Lisa J. Huriash, "Keeping Kosher To Be An Out-of-this-world Experience," *Tribunedigital-sunsentinel*, April 09, 2001, , accessed November 30, 2017, http://articles.sun-sentinel.com/2001-04-09/news/0104090196_1_kosher-food-kosher-meal-thermostabilized.

⁷⁷ *Ibid.*

one small step for Col. Ramon, but a large step for Jews worldwide.”⁷⁸ Indeed, Ramon was shaping up to be quite the role model for Israeli and Diaspora Jews alike.

Ramon’s efforts to be a symbol of what the Jewish people had overcome were not the only reasons why his participation in the shuttle mission was considered to be such a joyous occasion in Israel. It is also important to take into consideration the events of that Israel had been enduring over the past decade leading up to Ramon’s selection in order to understand part of the reasoning behind the excitement. As previously mentioned, Israel has essentially been in a state of war or close to it since 1948, but some episodes in its history have proven to be more emotionally disastrous for the country than others. In 1987, following twenty years of Israeli occupation of the West Bank and Gaza Strip, the First Intifada, began during which stones and Molotov cocktails were used against Israeli troops, and it led to an increased military presence in those areas.^{79,80} Not all Palestinians participated in the violence, but thousands did partake in demonstrations of civil disobedience such as striking from their jobs in Israel and refusing to pay taxes to the Israeli government.⁸¹ The economies of both Israel and the Palestinian Territories suffered during this period. The Intifada lowered Israel’s morale as it marked the finalization of the transition from its conflicts being internationally based to their becoming based at home.

In the mid-1990s things had seemed to be taking a turn for the better, though, when it came to the Israeli-Palestinian Conflict. Prime Minister Yitzchak Rabin had entered into peace negotiations with Yasser Arafat, the leader of the Palestinian Liberation Organization (PLO). The two signed the Oslo Accords in 1993 in which the framework for more Palestinian self-

⁷⁸ *Ibid.*

⁷⁹ Avraham Sela, "The first intifada: How the Arab-Israeli conflict was transformed," Haaretz.com, December 14, 2012, , <https://www.haaretz.com/israel-news/the-first-intifada-how-the-arab-israeli-conflict-was-transformed.premium-1.484677>.

⁸⁰ Howard Morley Sachar, *A history of Israel: from the rise of Zionism to our time* (New York: A.A. Knopf, 2010)., 964-968

⁸¹ *Ibid.*, 964-968

governance, and eventually the creation of a Palestinian state, was laid out.⁸² For many, it seemed that the conflict was finally coming to a close with the Oslo Accords, but the excitement would not last long. The Oslo Accords were celebrated on both sides of the conflict as a major step toward achieving peace, but there were also people on both sides who did not want to see any sort of compromise with the “enemy.” In November of 1995, Yitzhak Rabin was assassinated by a Jewish right-wing extremist named Yigal Amir at an event celebrating the peace process.⁸³ Rabin’s assassination was as shocking to Israel as Kennedy’s had been to the United States thirty years prior. Ultimately the peace negotiations broke down as Hamas began a series of terrorists against Israel and the right-wing Likud Party was elected back into power the following May.⁸⁴ Likud was not supportive of a two-state solution and did not want to give up the territories making it a less than ideal negotiating partner for peace.

Such traumatic events had left Israelis in desperate need of something positive to look forward to, and Ramon’s selection to serve on a shuttle mission seemed to fit the bill perfectly. Space exploration is considered to be an exciting topic for many people, especially when it is new to a society. American astronauts have been going into space since the early 1960s, so in the United States, the program has not gathered as much excitement as it once did. For Americans, their fellow citizens going into space by the mid-1990s had just become an everyday part of life. An increasing number of them could not remember in a world in which man did not travel into space on a frequent basis, a far step from half a century earlier when the concept of space travel still seemed ridiculous to the average person. It is important to bear in mind though that when Americans did first start going into space in the early days with John Glenn and Neil Armstrong,

⁸² U.S. Department of State, , <https://history.state.gov/milestones/1993-2000/oslo>.

⁸³ *Ibid.*

⁸⁴ *Ibid.*

the American public could not get enough of their astronauts. They were regarded as American heroes in part because they were helping the United States win the Space Race against the Soviet Union. The Space Race served as a great political opportunity for both the United States and the Soviet Union, for they were able to distract their respective populations from other issues at home and abroad. They hoped that instead of paying attention to the problems their nations were facing, people would choose to focus on the triumphs in space.⁸⁵ The same idea goes for Israel, the state was facing many issues, so Ramon's participation at NASA could allow the Israeli government to distract the public from the political situation to a certain degree.

In time American media coverage does not pick up speed on upcoming launches until they draw closer, but in Israel it was the opposite. Ramon's journey to become an astronaut was diligently recorded by Israeli media outlets from the start. It was reminiscent of the early days of the Apollo program when Americans still could not get enough space news. Israelis wanted to know every detail they possibly could about Ramon's preparation for the mission.

The Israeli need for a positive distraction only grew after Ramon had moved to Houston in order to train for the shuttle program. In 2001 Israel was beginning to see the rise of another wave of violence from Palestinian terrorists in what would become known as the Second Intifada. The start of the year was marked by failed peace talks at the Taba summit, followed shortly after by the election of Ariel Sharon as prime minister.⁸⁶ Sharon was another right-wing politician who was not necessarily viewed as the ideal candidate for peace negotiations though he would eventually go on to prove this thought wrong. After Sharon's election, Hamas, as well

⁸⁵ Sasha Rospopina for the Calvert Journal, Part of the New East Network, "Cult of the Cosmic: How Space Travel Replaced Religion in USSR," the *Guardian*, September 17, 2015, , <https://www.theguardian.com/world/2015/sep/17/ussr-space-exploration-religion-russia>.

⁸⁶ Matta, Nada, and René Rojas. "The Second Intifada: A Dual Strategy Arena." *European Journal of Sociology* 57, no. 1 (2016):84. doi:10.1017/S0003975616000035.

as other terrorist groups, began a series of suicide bombings targeted at Israeli civilians in Israel and the settlements in Palestinian Territories.⁸⁷ Many Palestinians were frustrated with the lack of progress made on the promises of the Oslo Accords and other agreements that were supposed to begin returning their land to their control. Instead there was an increase in the rise of Israeli settlements in the West Bank and Gaza Strip. The violence that erupted in 2001 was an escalation of this growing tension, though many Palestinians did not partake in the extreme actions characteristic of the Second Intifada.

The suicide bombings continued throughout 2002, prompting Israel to commence construction of its security wall along the borders of the Palestinian Territories in an attempt to prevent more attacks though its construction would not be completed for a while.⁸⁸ During this time Hamas was growing in power as other factions of terrorist groups were merging with it into one unified actor.⁸⁹ The different actors in the Israeli-Palestinian Conflict as a whole have very distinct goals and purposes. Total unity does not typically last long on either side, but the Palestinian terrorist groups have especially been marked by conflict and instability amongst themselves. The conflict was growing more frightening for Israelis day-by-day. Between the first and second years of the new Intifada, Israeli casualties rose from 41 to 191, an increase of 366 percent.⁹⁰ Perhaps considered to be one of the most horrific terrorist attacks that Israel ever experienced occurred in March during the Jewish holiday of Passover. A suicide bomber detonated his explosive in a hotel lobby in Netanya, where a Seder dinner was taking place.⁹¹ In

⁸⁷ Matta and Rojas. "The Second Intifada: A Dual Strategy Arena."

⁸⁸ *Ibid.*, 85

⁸⁹ *Ibid.*, 87

⁹⁰ *Ibid.*, 86

⁹¹ Matti Friedman et al., "Ten years after Passover blast, survivors return to Park Hotel," *The Times of Israel*, March 27, 2012, , <https://www.timesofisrael.com/ten-years-after-passover-bombing-survivors-return-to-netanyas-park-hotel/>.

total 30 people were killed and 140 others were wounded.⁹² A conflict may have been raging on in the country, but the hotel guests had no reason to expect that such a horror awaited them at such a joyous occasion. The Israel Defense Force increased its military intervention in response to these rising death tolls, but this did not deter Hamas and its partners. By the end of 2002, hundreds of Israelis and Palestinians had died as a result of the Second Intifada, and no end seemed to be in sight.

The current conflict only added to the need of Israelis to have something go right for their country. Ramon's achievements during his training were viewed as being the achievements of all Israel. People knew that space travel could be dangerous. In February 1986, the space shuttle Challenger exploded within minutes of being launched with thousands of Americans watching because of the inclusion of the schoolteacher Christa McAuliffe on the mission.⁹³ The Challenger disaster shut down the shuttle program for two years as NASA worked to make sure the event was fully understood and to know what to do in order to prevent a similar catastrophe in the future. By the time of Israel's announcement of Ramon's selection for the shuttle program, it had been operating for almost a decade without any disasters, causing a false sense of security in both the Israeli and American public. Challenger for many Israelis and Americans likely had come to be seen as a fluke, and thus there was nothing to worry about when it came to Columbia's upcoming mission. For the Israelis, Columbia was far from the chaos playing out in their borders; it seemed even farther removed from the chaos in their backyards. Even if there was no violence in Israel at the time of Columbia's launch or in the immediately preceding years, no one in the general public would want to discuss the possibility that the crew of Columbia could be met with death since it would be considered such a horrific topic.

⁹² *Ibid.*

⁹³ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*, 34

On January 16, 2003, the space shuttle Columbia with its seven-member crew on board was launched from Cape Canaveral in Florida with their families and the world watching. On Channel 2 in Israel that night, the news anchor began with the words “Finally we can begin with some good news,” referencing how the Israeli consciousness was at times being consumed by the violence of the ongoing Intifada.⁹⁴ Another Channel 2 reporter, who was actually present at the launch, exclaimed as Columbia made its way upward, “One of the sons of the state of Israel will gaze at us from space.”⁹⁵ It was not just Channel 2, but all of Israel buzzing with talk about the launch. Ramon’s official NASA portrait covered the front pages of various newspapers and tabloids throughout the country, and the Army Radio even spent the entire day discussing the launch on its broadcasts.⁹⁶ For the first time in two years, many Israelis found themselves proud of something. They could not wait to hear more about Ramon’s adventures on Columbia, even if not everyone necessarily cared about the gritty details of the experiments he would be conducting. To them, all that mattered was that there was someone up there in orbit around the Earth making Israel proud.

In the United States at NASA though disaster was looming behind the scenes. NASA engineers and scientists had realized that during the launch a piece of the foam installation had broken off, striking Columbia’s left wing.⁹⁷ During the course of the sixteen-day mission, NASA personnel worked around the clock to figure out to what extent the shuttle had been damaged and what they could do to prevent any further events. For many of the individuals working on the mission, the Challenger disaster had not fallen to the back of their minds as it had for the rest of

⁹⁴ Joel Greenberg, “Israel hails flight of 1st son to space,” *Tribunedigital-chicagotribune*, January 17, 2003, , http://articles.chicagotribune.com/2003-01-17/news/0301170291_1_shuttle-crew-amiram-shevah-international-space-station.

⁹⁵ *Ibid.*

⁹⁶ *Ibid.*

⁹⁷ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*

the world. For starters, whenever any sort of vehicle be it a rocket, airplane, or car is in motion there is always the chance that an accident will occur, but in the case of the space shuttles more was going on than just the daily risks of every day life. Following Challenger, NASA had promised to devote itself to improving its safety regulations, however, its improvements were more limited to only being on paper.⁹⁸ An investigation after Columbia found that there were issues with communication such as delays in correspondences between departments on critical concerns regarding the space shuttle flights, endangering the crews on board.⁹⁹ Indeed while many workers at NASA felt there was something wrong with Columbia to some degree or another, but the proper communication between parties did not always take place.¹⁰⁰ Ilan Ramon and his fellow astronauts remained unaware of the concern down in Houston during the course of their mission. Ultimately, NASA decided to proceed with the scheduled return flight to Houston on February 1, 2003. Reentry started off well, but as the flight progressed it became clear that something was wrong with the orbiter, especially once communications broke off with the shuttle crew. Sixteen minutes before the Space Shuttle Columbia was due to land, it exploded over the skies of Texas, taking the lives of all seven crew members, including the man who brought hope to a nation in peril.¹⁰¹

Chapter III: The Immediate Aftermath

“In an age when space flight has come to seem almost routine, it is easy to overlook the dangers of travel by rocket, and the difficulties of navigating the fierce outer atmosphere of the Earth. These astronauts knew the dangers, and they faced them willingly,

⁹⁸ Marco Santana and Kevin Spear, "Shuttle Challenger Tragedy 30 Years Ago: What Lessons Were Learned?" OrlandoSentinel.com, January 28, 2016, , <http://www.orlandosentinel.com/news/space/os-challenger-disaster-30-years-later-20160122-story.html>.

⁹⁹ *Ibid.*

¹⁰⁰ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*

¹⁰¹ *Ibid.*

knowing they had a high and noble purpose in life. Because of their courage and daring and idealism, we will miss them all the more."¹⁰²

These were the words of President George W. Bush as he addressed the American public just hours after the Columbia exploded. The mourning process began almost immediately in the United States and Israel as citizens of the respective nations began processing what had just transpired. In the Israeli government's first statement on the Columbia disaster, the government's spokesman described how Prime Minister Ariel Sharon had received a phone call from President George W. Bush during the two leaders exchanged condolences for their respective nations and the families of the fallen astronauts.¹⁰³ The following morning the Cabinet meeting for the government began with a memorial service for Ilan Ramon with several Knesset leaders expressing their grief.¹⁰⁴ The American ambassador to Israel, Daniel Kurtzer was also in attendance.¹⁰⁵ Prime Minister Sharon spoke of how Ramon was "a man of principle who had a great love for Israel and the Jewish people"¹⁰⁶. As with the United States, the day was considered to be a national day of mourning in the State of Israel with memorial services and assemblies being held for the fallen astronaut throughout his country.¹⁰⁷ Of course, this was just the beginning of the grieving process for Israel as it would be a while before the country could receive closure. NASA was just in the process of investigating what caused the Columbia to

¹⁰²NASA, , [https://history.nasa.gov/columbia/Troxell/Columbia Web Site/Documents/Executive Branch/President Bush/president1.html](https://history.nasa.gov/columbia/Troxell/Columbia%20Web%20Site/Documents/Executive%20Branch/President%20Bush/president1.html).

¹⁰³ "Israel Government Statement on Space Shuttle Columbia," Mfa.gov.il, February 1, 2003, , <http://mfa.gov.il/MFA/PressRoom/2003/Pages/Israel%20Government%20Statement%20on%20Space%20Shuttle%20Colum.aspx>.

¹⁰⁴ Israel mourns the loss of its first astronaut, Ilan Ramon.(1:00-2:00 PM)(Broadcast transcript)". 2003. *Weekend Edition Sunday*. NA.

¹⁰⁵ "Israel Government Statement on Space Shuttle Columbia,"

¹⁰⁶ Israel mourns the loss of its first astronaut, Ilan Ramon

¹⁰⁷ *Ibid*.

explode upon reentry though there were already some theories being discussed behind the scenes.¹⁰⁸ No matter the cause of the accident, the emotional damage was already done.

In the days following Columbia's explosion, Israeli and Jewish newspapers began publishing obituaries for Col. Ilan Ramon. Many of them describing how Ramon had become such an important symbol in Israel, especially given the country's political situation in the early 2000s. Before Columbia returned to Earth, one Israeli psychologist expressed this sentiment by stating that Israel had "known so many losses throughout [that] period" and that "Ramon [came] forward as a new hope" for their nation.¹⁰⁹ Another noted that Israelis "identified with his family because [they] had learned so much about them in the [previous] four years" and that they had "developed an intimacy with [Ramon] and his family".¹¹⁰ There was also a discussion on how the Ramon was in their opinion was a representation of the positive characteristics of Israel and that his death "served to dredge up a lot of the other trauma Israelis [had] gone through in the [previous] few years".¹¹¹ Indeed even Israel's mental health professionals recognized the significance he held for national morale and how he did serve as a way to mentally escape from the ongoing conflicts that Israel was facing at the time. The nation was operating on the belief that Ramon would soon be returning to Earth where he would share stories of his time in space with the Israeli public, perhaps one day he would have even participated on another shuttle mission. One Israeli teenager was quoted saying "Maybe we are cursed. We can't catch a break. Even the easy things are hard."¹¹² Such a statement shows that Israelis were hoping for a win

¹⁰⁸ Cabbage and Harwood, *Comm Check... The Final Flight of Shuttle Columbia*

¹⁰⁹ Bradley Burston and Haaretz, "A Tragedy beyond Translation: The Death of Ilan Ramon," Haaretz.com, February 2, 2003, , <https://www.haaretz.com/1.4924111>.

¹¹⁰ Naomi Segal and Mathew Gutman, "Israel Mourns Its First Astronaut," Cleveland Jewish News, February 06, 2003, , https://www.clevelandjewishnews.com/archives/israel-mourns-its-first-astronaut/article_2446a43d-8d04-50fe-bbcc-6a36e6c61a23.html.

¹¹¹ *Ibid.*

¹¹² *Ibid.*

when it came to the Columbia mission. There was so much going wrong at the time that many of them wanted at least one thing to go right for once. Given that the shuttle program had gone seventeen years without a fatal incident, the possibility of the Columbia crew not surviving their reentry was not on the minds of the general population in the United States and Israel, so as the teenager said this seemed to be an easy thing.

On February 5, 2003, NASA informed the Israeli government that Ilan Ramon's remains had been found and positively identified; they were flown back to Israel in the following days.¹¹³ Upon the return of his remains to Israel, a funeral was held close to Ben-Gurion Airport for Col. Ilan Ramon during which he received full military honors because of his exceptional service to his country throughout his career.¹¹⁴ During the funeral, both Prime Minister Ariel Sharon and President Moshe Katsav offered remarks about Israel's fallen astronaut explaining how important of a symbol he was for Israel. The president described Ramon as "One man, [who] was able in his last days, in his short life, with his strength of character to capture for a brief moment, before his death, the whole of the Jewish nation."¹¹⁵ Ramon's mission did become a unifying symbol in Israel, for like most countries Israel does possess many social and political divides that do at times tear people apart. The Second Intifada had heightened some of those divides as people were debating what was the best course of action to take. Throughout the course of the mission, the country was able to rally behind a single cause that transcended political affiliations and feel a sense of unity. This can be interrupted as one of the reasons Ramon was also a symbol of hope, for when a people stand united it makes them feel as though

¹¹³ "Col Ilan Ramon- Israel's First High-Tech Ambassador in Space," Mfa.gov.il, 2013, , <http://mfa.gov.il/MFA/MFA-Archive/2003/Pages/Col%20Ilan%20Ramon-%20Israel-s%20First%20High-Tech%20Ambassado.aspx>.

¹¹⁴ *Ibid.*

¹¹⁵ Moshe Katsav, "Remarks by President Katsav at State Memorial Ceremony," Mfa.gov.il, February 10, 2003, , <http://mfa.gov.il/MFA/PressRoom/2003/Pages/Remarks%20by%20President%20Katsav%20at%20State%20Memorial%20Cere.aspx>.

they can overcome any obstacle facing them. However, it can also be interpreted that the extent of Ramon's unifying ability was exaggerated by the press and political leaders in order to distract the public from the ongoing tension. This would serve to draw away attention from the leadership's failures in the crisis.

Katsav shared that during Ramon's flight in space he wrote to him, telling him that upon a recent flyover of Israel he was able to see Jerusalem clearly and therefore recited the Shema.¹¹⁶ The Shema is considered to be one of the most significant prayers in Judaism because it affirms that there is only one God and is recited multiple times a day by Jews who partake in the daily prayers. Its words are "Hear O Israel, the Lord is our God, the Lord is one."¹¹⁷ Even though Ilan Ramon was Jewish, no one really expected him to take the time to recite the Shema while on his shuttle mission. He made the choice to do so because he recognized how important it was to the nation that he was representing. In his speech at the state memorial service for Ramon, Prime Minister Sharon discussed the multiple Jewish items that Ramon had taken on board the shuttle with him, which included the previously mentioned Torah scroll and "Moon Landscape" drawing as well as a Kiddush cup, an IAF badge, and an Israeli flag.¹¹⁸ These items "constituted a source of pride and united [Jewish] hearts in [those] trying times" according to Sharon.¹¹⁹ Such sentiments show that Ramon's efforts to be a representative for Israel and the Jews in the Diaspora were not in vain. They were truly appreciated and meaningful to Jews across the globe enough so that even the head of the State of Israel felt the need to speak in depth about their significance.

¹¹⁶ Katsav, "Remarks by President Katsav at State Memorial Ceremony,"

¹¹⁷ *Ibid.*

¹¹⁸ Ariel Sharon, "Remarks by PM Ariel Sharon at State Memorial Ceremony," Mfa.gov.il, February 10, 2018, , <http://mfa.gov.il/MFA/PressRoom/2003/Pages/Remarks%20by%20PM%20Sharon%20at%20State%20Memorial%20Ceremony%20fo.aspx>.

¹¹⁹ *Ibid.*

While preparing for his mission to space Ilan Ramon and others had been taking steps to commemorate the event in Israel upon his return. In Hebrew, the name “Ilan” means tree, so Ramon felt a project incorporating trees would be quite fitting. Shortly before Columbia’s launch, he stated that he “would like to see at least 13 or 14 million new trees planted in Israel exactly one year from [then], on the anniversary of the launching.”¹²⁰ The Jewish National Fund (JNF), an organization that with along other aspirations, aims to plant as many trees as possible in Israel, took on this responsibility in order to make Ramon’s dream a reality after his death.¹²¹ To commemorate the one year anniversary of the Columbia explosion in 2004, the JNF ran a fundraiser in which people could plant a tree in honor of Ilan Ramon during the holiday of Tu B’Shevat.¹²² Tu B’Shevat, the New Year for trees in Judaism, happened to fall a week after the one year anniversary in 2004.¹²³ The JNF is not just an organization that solely operates in Israel, it is one that has ties across the world. As a result, Jews in both Israel and the Diaspora were able to participate in this event. Many American congregations and Jewish day schools actually took part in it, showing how Ramon meant a lot of the greater global Jewish community as well as Israel.¹²⁴ Another way in which a celebration of Ramon’s time in space turned into a way to commemorate his death came from the Israel Government Coins and Medal Corporation. Preceding the launch, the corporation was going to release a coin dedicated to Ilan Ramon once

¹²⁰ "Col Ilan Ramon- Israel's First High-Tech Ambassador in Space," Mfa.gov.il,

¹²¹ "JNF COMMEMORATES ILAN RAMON IN ANNUAL TU B'SHEVAT CELEBRATIONS IN SCHOOLS AND CONGREGATION." Jewish National Fund - JNF COMMEMORATES ILAN RAMON IN ANNUAL TU B'SHEVAT CELEBRATIONS IN SCHOOLS AND CONGREGATIONS. 2004.
https://secure.jnf.org/site/SPageServer/?NONCE_TOKEN=18D79DEC1891874B36387603E5A08E8D&pagename=PR_COMMEMORATES_ILAN.

¹²² *Ibid.*

¹²³ Michael Strassfeld, "Tu Bishvat: Tasting of the Tree," in *The Jewish Holidays: A Guide & Commentary* (New York, NY: Harper & Row, Publishers, 1985).

¹²⁴ "JNF COMMEMORATES ILAN RAMON IN ANNUAL TU B'SHEVAT CELEBRATIONS IN SCHOOLS AND CONGREGATION."

he returned, but it became a remembrance coin instead.¹²⁵ It is just another example of how Israel's joy turned into sorrow.

In the weeks following the Columbia disaster, hundreds of volunteers searched the ground of Texas and surrounding states in search of debris from the shuttle. NASA, first of all, needed crucial components of the space shuttle in order to fully understand what had happened upon reentry, but there also was a sentimental element to it in that they were gathering up the final belongings of the fallen astronauts. Only so much could survive the explosion of the orbiter, only about forty percent of the vehicle was ever located, so what was found typically had suffered severe damage.¹²⁶ Some of the volunteers actually managed to uncover 38 sheets of Ilan Ramon's journal near the town of Palestine, Texas.^{127, 128} Much of the writing had been damaged since it had been exposed to such extreme elements when falling to Earth.¹²⁹ While to some it may have seemed that there was no hope of ever getting to read Ramon's thoughts from his final days, Israel became determined to make it so. A team consisting of experts such as paper conservation specialists was assembled by the Israel Museum in order to reconstruct the entries of Ilan Ramon's journal.¹³⁰ The team worked every day over the course of eight months using techniques such as infrared light and image enhancement technology that had previously been used on the Dead Sea Scrolls.^{131, 132} The pages the team was handling had to be divided into four

¹²⁵ "Col Ilan Ramon- Israel's First High-Tech Ambassador in Space," Mfa.gov.il,

¹²⁶ Loretta Hidalgo Whitesides, "Diary Survived Shuttle Accident, Goes On Display," *Wired*, October 6, 2008, , <https://www.wired.com/2008/10/dairy-survived/>.

¹²⁷ Efron, Noah. 2011. "ZIONISM AND THE EROS OF SCIENCE AND TECHNOLOGY". *Zygon*. 46 (2): 414

¹²⁸ The Israel Museum, Blue and White Pages | Documenting the History of Israel, , http://museum.imj.org.il/exhibitions/2008/blueonwhite_e/item2.asp?itemNum=129.

¹²⁹ *Ibid.*

¹³⁰ Efron. 2011. "ZIONISM AND THE EROS OF SCIENCE AND TECHNOLOGY, 414

¹³¹ Hidalgo Whitesides, "Diary Survived Shuttle Accident, Goes On Display,"

¹³² Efron. 2011. "ZIONISM AND THE EROS OF SCIENCE AND TECHNOLOGY, 414

different groups since they had not all suffered from the same type of damage, and therefore how to be analyzed using different methods for each.¹³³

In the end, they were able to accomplish their goal and bring Ramon's last thoughts to his family and country.¹³⁴ Not only would this provide some form of comfort for his grieving family who had requested the task be taken on, but it would also allow Israel as a whole to receive more closure following the disaster. The restoration of Ramon's journal pages can be seen as a way to honor his memory since even if much of his personal feelings about his time in space will never be known, he was at least given the opportunity to share some of his feelings. This is similar to how in the age of social media, which had not quite started at the time of Columbia, Facebook pages or other platforms can serve as a way for people to cope with loss.¹³⁵ Facebook, in particular, allows for the accounts of deceased users to be memorialized which serves as a way for their loved ones to cope with their death by looking back at their old posts.¹³⁶ Journals are similar to social media accounts in that they preserve an individual's thoughts even after they are gone. Some of the other pages in the journal contained technical notes regarding the experiments Ramon was going to be conducting, some contained Jewish prayers that he planned on reciting during Shabbat, and others were his personal thoughts from his time in orbit.¹³⁷ Additionally, Ramon's journal was significant because it was the only journal belong to a member of the crew

¹³³ Sharon Brown and Laser Sin-David, "Diary of an Astronaut: Examination of the Remains of the Late Israeli Astronaut Colonel Ilan Ramons Crew Notebook Recovered After the Loss of NASAs Space Shuttle Columbia," *Journal of Forensic Sciences* 52, no. 3 (2007): , doi:10.1111/j.1556-4029.2007.00426.x.

¹³⁴ Efron. 2011. "ZIONISM AND THE EROS OF SCIENCE AND TECHNOLOGY, 414

¹³⁵ Review of *Journalism and Memorialization in the Age of Social Media*, by Peter Joseph Gloviczki. New York, NY: Palgrave Macmillan, 201

¹³⁶ Jack Linshi, "Facebook: Here's What Happens to Your Account When You Die," Time, February 12, 2015, , <http://time.com/3706807/facebook-death-legacy/>.

¹³⁷ Hidalgo Whitesides, "Diary Survived Shuttle Accident, Goes On Display,"

that was uncovered from the wreckage.¹³⁸ This meant that some of its pages were a sort of inside look into what life was like for the crew during the course of their training the subsequent mission.

Ilan Ramon's trip on the space shuttle Columbia was characterized by his desire to represent Israel and the Jews in the Diaspora. As a result, he brought several items with him on board to make this possible such as the Torah scroll belonging to physicist Joachim Joseph. There have never been any reports though that the scroll had survived the accident.¹³⁹ However, a short while after the Columbia disaster Rona Ramon learned that the Torah scroll that her husband had taken abroad the shuttle had a sister scroll belonging to a man named Henry Fenichel who had also survived the Bergen-Belsen camp and then went on to become a physics professor.¹⁴⁰ Fenichel agreed in part because "if for no other reason than it helps Rona Ramon bring a certain chapter in her life to some closure."¹⁴¹ After receiving Fenichel's permission, Rona asked her late husband's friend, Canadian astronaut Steve MacLean if he would be willing to carry the scroll with him during his next shuttle mission.¹⁴² For Rona Ramon and Steve MacLean, such an act was important to honoring Ilan's memory. From the moment he had seen the Torah scroll sitting in his colleague's apartment and heard its story, Ramon had strongly felt that the scroll's symbolism of how far the Jewish people had come following the Holocaust would be elevated if it traveled with him into orbit. MacLean stated that one of the reasons he took the sister scroll into orbit with him without hesitation was because Ilan had spoken often

¹³⁸ *Ibid.*

¹³⁹ Rich Tenorio et al., "Space Torah: When the creation story flew back into the firmament," *The Times of Israel*, December 30, 2016, , <https://www.timesofisrael.com/space-torah-when-the-creation-story-flew-back-into-the-firmament/>.

¹⁴⁰ *Ibid.*

¹⁴¹ Britt Kinnerly, "Tiny Torah Returned to Owner After Shuttle Trip," Tiny Torah Returned to Owner After Shuttle Trip, December 4, 2006, , <http://www.uc.edu/News/NR.aspx?ID=4861>.

¹⁴² Tenorio et al., "Space Torah: When the creation story flew back into the firmament,"

about how important it was to bring the scroll with him.¹⁴³ In the case of MacLean, bringing the scroll on board with him was not so much simply a gesture for Israel and the Jewish people, but one to honor a fallen friend.

It did take a while for the Torah scroll to reach the stars, for the space shuttle program took a three-year hiatus as the Columbia disaster was fully investigated. Given that it was the second fatal accident a space shuttle had experienced in less than twenty years, investigators wanted to determine if the remaining shuttles were safe to operate. Finally, in 2006, the shuttle was cleared for launch and MacLean took the scroll on board his flight on the space shuttle Atlantis.¹⁴⁴ Two and a half months after MacLean's shuttle trip, he returned the Torah scroll to Fenichel at a special ceremony at the Hebrew Union College.¹⁴⁵ Upon receiving his Torah back, Fenichel described what he felt were the reasons for the two scrolls' significance and the other reason why he agreed to Rona Ramon's request. He explained that the reason why the rabbi had given his Torah away in the concentration was so that even though he was unlikely to survive, the scroll's story would live on.¹⁴⁶ According to Fenichel, regardless of one's level of religious observance, "the Torah sort of represents the survival of the Jewish people, the ability to rise from the depths of despair in the Holocaust and reach for the stars".¹⁴⁷ Such a statement is a total embodiment of what the Torah scroll represented to Ramon and why he felt so strongly that he had to make the journey with him. One must bear in mind that to a Jew who was in a concentration camp during the Holocaust, the future for their people may have seemed so bleak

¹⁴³ *Ibid.*

¹⁴⁴ *Ibid.*

¹⁴⁵ Kinnerly, "Tiny Torah Returned to Owner After Shuttle Trip,"

¹⁴⁶ *Ibid.*

¹⁴⁷ *Ibid.*

at that moment that the notion that one of them would journey beyond Earth would sound inconceivable.

Chapter IV: The Death of a Son

As time went on the emotional wound that Ramon's horrific death had left Israel began to heal. However, in September 2009, Israel was once again reminded of Ramon's death when his eldest son, Asaf, was killed in a plane crash. The 21-year-old died as the result of the F-16 jet he was piloting at the time, crashing over South Mount Hebron on September 13, 2009.¹⁴⁸ Following the Columbia disaster, Asaf Ramon had publicly expressed a desire to follow in his father's footsteps in order to feel closer to him; hoping to actually become an astronaut himself one day.¹⁴⁹ According to Tal Ramon, his older brother had been considering a career as a pilot since he was in the first grade.¹⁵⁰ The young man though while following his father's path, did wish to form an identity for himself outside of just being Ilan Ramon's son.¹⁵¹ Indeed the younger Ramon's career was taking a similar trajectory to his father's. Upon his graduation from high school, he had entered to the Israeli Air Force and performed quite well in its pilot's training course.¹⁵² He had received his pilot's wings from then-President Shimon Peres earlier in 2009 as well as having been a recipient of a presidential honor.¹⁵³ At the time of his death, he had earned the rank of captain.

¹⁴⁸ Sharon Roffe-Ofir, "Asaf Ramon to be buried next to father," Ynetnews, September 14, 2009, , <https://www.ynetnews.com/articles/0,7340,L-3776382,00.html>.

¹⁴⁹ *Ibid.*

¹⁵⁰ Tal Miller and Yoav Sivan, "Ramon's Piano: An Israeli Rock Musician Faces Repeated Public Family Tragedy Head On," *Tablet Magazine*, June 20, 2016, , <http://www.tabletmag.com/jewish-arts-and-culture/music/204984/ramons-piano>.

¹⁵¹ Haaretz Service and Anshel Pfeffer, "Astronaut Ilan Ramon's son dies in IAF crash," Haaretz.com, September 09, 2009, , <https://www.haaretz.com/1.5487838>.

¹⁵² *Ibid.*

¹⁵³ *Ibid.*

Captain Ramon had joined his squadron during the summer in order to participate in advanced training courses.¹⁵⁴ He was killed during a training exercise and not in a combat situation, which for some made his death undoubtedly more tragic.¹⁵⁵ A death during a training exercise makes one question more what could have been to prevent the tragedy more so than had the death occurred in a battle. While IAF training exercises are by no means supposed to be a walk in the park, they are not supposed to end in a trainee being killed. Following an investigation, it was eventually determined that Asaf had blacked out during his flight, a finding which prompted Israel to make some changes to its training courses.¹⁵⁶ In the days after the crash, the IAF's General Yochanan Locker stated that "It is a difficult day for the Air Force [when there is] an accident like this, in which people are killed.", a clear expression of the tragic sentiment felt throughout Israel in the wake of Asaf's death.¹⁵⁷ IAF helicopters uncovered Asaf's body not long after the crash.¹⁵⁸ Within hours news of the crash spread across Israel and the rest of the world. Ramon's family in particular was informed of the tragedy by the IAF's Commander Major-General Ido Nehushtan who told reporters how he had embraced Rona Ramon and her other children as the family had suffered a second major loss in six years.¹⁵⁹ Israel is a country where the death of any soldier is strongly felt throughout the society, and the death of Asaf Ramon was no exception. However, due to the country's emotional investment in his father's legacy, Asaf's death had a different kind of impact on Israel. Prime Minister Benjamin

¹⁵⁴ *Ibid.*

¹⁵⁵ *Ibid.*

¹⁵⁶ Miller and Sivan, "Ramon's Piano: An Israeli Rock Musician Faces Repeated Public Family Tragedy Head On,"

¹⁵⁷ Service and Pfeffer, "Astronaut Ilan Ramon's son dies in IAF crash,"

¹⁵⁸ *Ibid.*

¹⁵⁹ Roffe-Ofir, "Asaf Ramon to be buried next to father,"

Netanyahu described the death as being almost the equivalent of “a biblical tragedy” and noted how the father and son died in similar circumstances.¹⁶⁰

Netanyahu’s choice of comparing Asaf’s death to “a biblical tragedy” is an interesting one. If he had just referred to the accident as a tragedy, it would not have been that unusual since “tragedy” can be a common word to describe an untimely death of any nature. It is the addition of the adjective “biblical” that makes the statement peculiar. The wording first provokes images of actual biblical tragedies such as the destruction of the First Temple or Noah’s flood, and in the modern sense, it is often used to describe major disasters such as category five hurricanes or tsunamis. It is typically not associated with the death of a single individual. Netanyahu choice of describing the accident as a “biblical tragedy” is likely to play up its significance in Israel.

Many Israeli funerals for fallen soldiers garner guests outside of the deceased’s loved ones as people come from around the nation to show their support. When Asaf Ramon was laid to rest two days after his jet crashed many high-ranking Israelis leaders attended his funeral including PM Benjamin Netanyahu, President Shimon Peres, and Defense Minister Ehud Barak were among those in attendance.¹⁶¹ Netanyahu requested to postpone an important meeting with US special envoy George Mitchell that had been scheduled for the same day as the funeral.¹⁶² Such a decision does show the significance of Asaf Ramon in Israeli society, for the Prime Minister went to great lengths to make sure that he attended his funeral. In the cases of other fallen soldiers, the current prime minister at that time will often offer words of condolences to the victim’s family but rarely do they attend the funeral. It likely that the political figures such as Netanyahu and Peres who were attendance saw the funeral as a way to gain favor with the Israeli

¹⁶⁰ Nir Hasson, "Tears flow as Asaf Ramon is laid to rest," Haaretz.com, September 15, 2009, , <https://www.haaretz.com/1.5471537>.

¹⁶¹ *Ibid.*

¹⁶² Roffe-Ofir, "Asaf Ramon to be buried next to father,"

public. Various commentators have discussed how Israel had grown close to the Ramons, so the country's leaders likely assessed that making an appearance at Asaf's funeral would show that they too were deeply impacted and gain them more respect among the public.

Asaf's recognition to Israelis had even been displayed earlier that year when crowds gathered to watch him receive his wings from President Peres. In a 2016 interview, his younger brother Tal recalled how he helped his brother escape the swarms of press members who were there covering the event.¹⁶³ He also recollected how Peres made note to his mother that the Ramon family's special moment was being shared by all of Israel because their "hearts beat with love and excitement".¹⁶⁴ The Ramons had become a family in which their country to some degree or another, was going to share in their private moments because of the connection they felt towards them. The Ramon family was just not any Israeli family, but it was the family of a man who had given hope to a nation at a time when it was in desperate need of it. It was because of this situation, that their family was well-known even outside of Israel.

Netanyahu's interactions with foreign officials in the days between the crash and funeral show how Asaf's role in Israel was understood by those outside the Jewish state. Upon making his request to postpone the meeting with Envoy Mitchell, the American official offered his sympathy for the Ramon family.¹⁶⁵ While visiting Egypt the day before the funeral, Netanyahu shared the news of Asaf's death with then-President Hosni Mubarak, Mubarak too offered his condolences to the Ramon family as well as the Israeli people.¹⁶⁶ President Shimon Peres gave a eulogy at the funeral in which he recalled presenting Asaf with his wings only a few months

¹⁶³ Miller and Sivan, "Ramon's Piano: An Israeli Rock Musician Faces Repeated Public Family Tragedy Head On,"

¹⁶⁴ *Ibid.*

¹⁶⁵ Roffe-Ofir, "Asaf Ramon to be buried next to father,"

¹⁶⁶ *Ibid.*

earlier and how he recited to himself a prayer of “Lay not thy hand upon the lad” as he did so.¹⁶⁷ One must hold a special place in the heart of a society in order to warrant receiving a eulogy from its president upon their death. Asaf Ramon was laid to rest beside his father, Ilan Ramon’s grave at the Nahalal Moshav’s cemetery.¹⁶⁸ During his funeral, his mother Rona, also eulogized him as she described how roles were supposed to be reversed with a child burying their parent, not the other way around.¹⁶⁹ She continued on telling her son “My Asaf, take care of Dad. I know Dad will take care of you, and hug you now”, a statement representing the pain that the family had endured in such a small amount of time.¹⁷⁰ Due to Ilan Ramon’s symbolism in Israel, the Ramon family had come to hold a special place in the country’s heart, it understood the pain that the family was going through and all that they had sacrificed for the advancement of their nation. Asaf’s untimely death had served as a reminder to Israel, the loss that it had suffered six years prior.

Chapter V: Ramon’s Ongoing Legacy on the National and Family Levels

In the years since Ilan Ramon’s death on the space shuttle Columbia and his son’s death in an F-16 crash, Israel has become determined to promote the Ramon legacy. Each year since 2005, the ISA has hosted the Ilan Ramon International Space Conference with the goal of opening global dialogues on topics related to space exploration.¹⁷¹ As of the present day, there has yet to be another Israeli astronaut, but many Israelis believe that by sharing Ilan Ramon’s story with the younger generation they will likely change this. One of the main roles of the Israel Space Agency in recent years has been to work to advocate for the study of science, technology,

¹⁶⁷ Hasson, "Tears flow as Asaf Ramon is laid to rest,"

¹⁶⁸ Roffe-Ofir, "Asaf Ramon to be buried next to father,"

¹⁶⁹ Hasson, "Tears flow as Asaf Ramon is laid to rest,"

¹⁷⁰ *Ibid.*

¹⁷¹ "The 13th Ilan Ramon International Space Conference," Tel Aviv University, , <https://en-spaceconf.tau.ac.il/node/1450>.

engineering, and mathematics (STEM) by Israelis.¹⁷² One of the ways in which the ISA has gone about this task is by using Ramon's legacy; another aim for the agency is to preserve Ramon's memory.¹⁷³ The ISA in cooperation with other organizations holds events such as the Young Science Olympics each year in memory of Ramon and fellow Columbia crew members in order to help achieve this goal.¹⁷⁴ These kinds of events get children excited about science, a task that is not always easily accomplishable. It also gives them the chance to deepen their scientific curiosity and knowledge from an early age, which will prompt many of them to choose a career in a STEM field later down the road.

The ISA often teams up with organizations such as the Ramon Foundation to help put on these events. The Ramon Foundation was founded with the goal of encouraging young Israelis to pursue careers in STEM fields, an aspiration that was dear to Ilan and Asaf Ramon.¹⁷⁵ Given Ramon's career choice, the Foundation does have a lot of projects related to space exploration such as the Ramon Space Lab, which allows participating students to design experiments that will be proposed to be conducted on the International Space Station.¹⁷⁶ Many STEM advocacy programs hold competitions for experiment designs, but very few offer the possibility that one's experiment will be carried out in space. Such a prospect can be quite thrilling for young students and regardless of their success, it has the potential to get them permanently interested in the STEM fields in the pursuit of learning more. While the Ramon Foundation does have programs focused on space, it also strives to promote the study of other scientific fields as well as the development of leadership skills. Each year the Foundation partners with the various ministries

¹⁷² "About The Israel Space Agency," סוכנות החלל הישראלית,

¹⁷³ "Ilan Ramon," סוכנות החלל הישראלית, , <http://www.space.gov.il/en/node/981>.

¹⁷⁴ *Ibid.*

¹⁷⁵ "קרן רמון ע"ש אילן ואסף רמון," The Ramon Foundation,

¹⁷⁶ *Ibid.*

in the government for the Ramon Award for exceptional twelfth graders in order to work with them over the school year in order to further improve their leadership potential and make them more aware of the issues facing their society.¹⁷⁷ It is important to bear in mind that Ilan and Asaf Ramon were both strong Israeli leaders and therefore a big part of honoring their legacy for many people is to also encourage the next generation to mature into outstanding leaders.

Returning to the Israel Space Agency, it does not just focus on promoting STEM education, but is also very involved in research, often through collaboration with other world space agencies. First of all, the ISA has maintained a close relationship with NASA. In 2010, the two agencies signed an agreement to continue to work together in order to research a variety of scientific fields in hopes of improving on their exchange of ideas.¹⁷⁸ Over the years NASA has incorporated Israeli technology into its projects such as is the case with the Curiosity rover on Mars, which utilizes an Israeli cooling system.¹⁷⁹ The ISA and NASA have made no indication though of sending another Israeli astronaut into space anytime soon. On the American side of this partnership, this is likely because sending another Israeli to orbit is low on the priorities list. The space shuttle program came to a close in 2011 and while there had been plans for a replacement program, budget cuts forced NASA to archive the plan for the time being.¹⁸⁰ As of 2018, NASA is still relying on Russia in order to send American astronauts into space as the government is focused on space exploration becoming more commercialized.¹⁸¹

¹⁷⁷ *Ibid.*

¹⁷⁸ "NASA and Israel Space Agency Sign Statement of Intent for Future Cooperation." *PR Newswire* 11 Aug. 2010. *Business Insights: Global*. Web. 14

¹⁷⁹ "The 13th Ilan Ramon International Space Conference," Tel Aviv University,

¹⁸⁰ "WITH END OF SPACE SHUTTLE PROGRAM, AMERICA NOW MUST DEPEND ON RUSSIAN TAXIS TO GET TO SPACE." *States News Service*, 21 July 2011. *Academic OneFile*, <http://3A%2F%2Flink.galegroup.com%2Fapps%2Fdoc%2FA262002389%2FAONE%3Fu%3Dcolu44332%26sid%3DAONE%26xid%3De6920eb6>.

¹⁸¹ *Ibid.*

The current state of American-run manned missions to space makes it unlikely that the American government will be looking to strengthen its relationship with any of its allies by sending one of their citizens into space. Even if it will be quite some time before an Israeli flies on another American space vessel again, the relationship between the two countries in regards to space still surpasses just scientific curiosity. Yad Vashem recently gave a copy of “Moon Landscape”, the drawing that Ramon had taken a replica of with him on board Columbia, to American astronaut Andrew “Drew” Feustel.¹⁸² Feustel, who met Ramon during his NASA training, will be taking the drawing with him on an upcoming mission to the International Space Station in 2018.¹⁸³ Taking the “Moon Landscape” into orbit with him had been highly important to Ilan Ramon prior to his Columbia mission, for he wanted to take something that had survived through the Holocaust. The decision to send another replica of it into space again will be a way to honor Ilan Ramon on the fifteenth anniversary of his death. It is a similar gesture to that of Steve MacLean taking the sister Torah scroll on his 2006 shuttle mission. The action additionally shows how Israel and the United States have not forgotten about Ramon, and are still working together to preserve the memory of him and his fallen crewmates.

The ISA also has projects in operation with other space agencies on various projects. For example, the Venus Project is conducted in cooperation with the France Space Agency; the project consists of micro-satellites that have super-spectral sensing in order to monitor the Earth’s environmental changes.¹⁸⁴ Israel is also working with the Italian Space Agency since 2009 on another project aimed at environmental monitoring. The SHALOM mission utilizes

¹⁸² Tamara Zieve, "Holocaust-era drawing Ilan Ramon took to space going up again," *The Jerusalem Post* | JPost.com, February 01, 2018, , <http://www.jpost.com/Israel-News/Holocaust-era-drawing-Ilan-Ramon-took-to-space-going-up-again-540465#/>.

¹⁸³ *Ibid.*

¹⁸⁴ "The 13th Ilan Ramon International Space Conference," Tel Aviv University,

hyperspectral sensing for the sake of being able to identify chemical substances and containments on the Earth's surface.¹⁸⁵ Israel's cooperation with France and Italy on satellite projects shows that the country is striving to become a major international figure when it comes to space exploration. Its ability to build and launch satellites into orbit also shows that the country has the potential to become a bigger player in the field, for many of the world's nations have yet to launch their own satellites into space. Being able to launch satellites does not necessarily guarantee that a country will be successful in space exploration, but it does put it the right path to do so since the country will not have to depend so much on others in order to get to space. Due to the ongoing political situation in Israel though it does not have resources to devote as much to research on space exploration as it would like. Most of the satellite research that the state has been working on has been for the main purpose of strengthening Israel's military capabilities.

The State of Israel has continued to keep tabs on the Ramon family's well-being as time has gone by. Rona Ramon in particular is considered to be such a prominent figure in Israel that she was asked to participate in the government's celebrations for Israeli Independence Day in 2016.¹⁸⁶ In recent years, she has become a big activist for STEM education and leadership as well as for the media giving families their personal space following the deaths of Ilan and Asaf. She currently serves on the board of directors for the Ramon Foundation, which she founded in order to help promote her late husband and son's aspirations for Israeli society.^{187, 188} Shortly after Asaf's death, she learned that he had greatly appreciated how her and her husband had

¹⁸⁵ "The Shalom Mission," סוכנות החלל הישראלית, December 16, 2014, , <http://www.space.gov.il/en/research-and-development/1144>.

¹⁸⁶ Greer Fay Cashman, "'The Israeli space ambassador'," *The Jerusalem Post* | JPost.com, May 12, 2016, , <http://www.jpost.com/Israel-News/The-Israeli-space-ambassador-453778>.

¹⁸⁷ "קרן רמון ע"ש אילן ואסף רמון," The Ramon Foundation,

¹⁸⁸ Cashman, "'The Israeli space ambassador',"

always encouraged their children to work hard and follow their dreams.¹⁸⁹ This is was the big reason why she decided to start the Ramon Foundation so that she could bring those values to children throughout Israel regardless of their ethnic or religious background. Rona Ramon has also been a major figure behind the previously mentioned Ilan Ramon International Space Conference. Every year the conference features several guests from NASA, for Rona Ramon has maintained a close relationship with many of its members even those from countries that are not on great terms with Israel.¹⁹⁰ Her family also receives tremendous support from their friends in the IAF who knew Ilan and/or Asaf. Given that the family has shown great commitment and sacrifice for the air force, they have gain the institution's respect and support.

Tal Ramon, the Ramons' second born son, explained that at least part of the reason why his mother chose to become an activist after his brother perished was because she was angry with how the press ignored their privacy during such an emotional period in their lives.¹⁹¹ He recalled that his mother was first aware that something had gone wrong because the press converging on their house following the crash.¹⁹² This is such a horrific way for one to learn about the loss of a loved one and does show that the family's position in society came with an unwanted emotional cost. It is a downside of Ilan Ramon's legacy in Israel, for his family has just tried to return to a normal life. Rona Ramon herself, has said that after the Columbia disaster she found herself thrown into the role of being Israel's representative at events honoring the shuttle and during the course, she felt that she "was losing [her] privacy" at a time when she needed it most.¹⁹³ As a result of her husband's death, Rona was turned into a symbol for her country to stand in place for

¹⁸⁹ *Ibid.*

¹⁹⁰ *Ibid.*

¹⁹¹ Miller and Sivan, "Ramon's Piano: An Israeli Rock Musician Faces Repeated Public Family Tragedy Head On,"

¹⁹² *Ibid.*

¹⁹³ Cashman, "'The Israeli space ambassador',"

the role that Ilan himself would have played. She did do her best to stay out of the public's eye for some years, but she was once again thrown back into the spotlight after Asaf's crash.¹⁹⁴ Along with advocacy for leadership and space education, Rona Ramon has also been working with families coping with loss. After the death of her son, she earned a master's degree in holistic health from Lesley University in the United States so that she would be able to effectively counsel people in similar situations to hers.¹⁹⁵ According to Ramon, this experience has better allowed to understand her own grieving process.¹⁹⁶

Tal Ramon also had his own ways of coping with the loss of his father and brother at such a young age. He began to pour his heart out into music, a hobby that he initially had taken up as a young boy in the early days of his father's NASA training.¹⁹⁷ From early on in his musical ambitions, Tal felt the encouragement of his father. Before his voyage on Columbia, Ilan left his son a note telling him to "Keep on playing music, and know" that he would always listen to him.¹⁹⁸ Despite his time-consuming commitments at NASA, Ramon strived to be there for his family. This could be interpreted as one of the reasons he is so admired by Israelis and others, his devotion to his family, a characteristic that people tend to value. Ramon's deep love for his family that he openly expressed on many occasions is another reason why his death can feel exceptionally tragic to people. An individual dying in the circumstances in which Ramon did is tragic enough, but once they become increasingly humanized to someone such as by seeing that they were a family man, then it hurts more because one feels that they that can relate to them on a personal level.

¹⁹⁴ Aron Heller et al., "Decade after shuttle disaster, Rona Ramon still trying to cope," *The Times of Israel*, January 31, 2013, , http://www.timesofisrael.com/decade-after-shuttle-disaster-rona-ramon-still-trying-to-cope/?fb_comment_id=337148619724715_51368710#f3731acc18a7a32

¹⁹⁵ *Ibid.*

¹⁹⁶ *Ibid.*

¹⁹⁷ Miller and Sivan, "Ramon's Piano: An Israeli Rock Musician Faces Repeated Public Family Tragedy Head On,"

¹⁹⁸ *Ibid.*

His son's musical aspirations were likely very meaningful for the Israeli astronaut because music had a special place in his life. Ramon's mother who had survived the Holocaust, worked as a piano teacher, and upon his graduation from his IAF training program, he used his first paycheck to buy a Steinway piano that had been in Germany during World War II.¹⁹⁹ Much as how Ramon viewed his role as the first Israeli astronaut as a testament to Jewish survival, the piano represented to him his people's ability to overcome anything. Tal now houses his father's piano in his Tel Aviv apartment and the instrument in general serves as a crucial tool for his music.²⁰⁰ Tal is an up and coming musician in Israel, releasing his debut album in 2016 with many of his songs drawing their inspiration from the pain and loss he has gone through in his life.²⁰¹ When listening to his music, Israelis can feel a connection to the loss of Ilan and Asaf, but of course as is the case with most songs, they can also relate the music to their own individual experiences. To many Israelis aware of his heritage though, Tal's music will likely primarily serve as a reminder of his father and brother's tragic deaths.

Conclusion

Just as Colonel Ilan Ramon's story did not begin with his birth his birth in 1954, it has surely not ended following his death aboard the space shuttle Columbia. The loss of Israel's first astronaut, undoubtedly shook the country quite hard, for it came at a time when Israel felt it needed at one thing to go right. The country that was expecting to be celebrating the return of its cosmic hero on February 1, 2003, ended up instead finding itself in the mourning process. Israel returned to business as usual after the initial shock wore off, but in many ways that the country

¹⁹⁹ *Ibid.*

²⁰⁰ Ariel Dominique Hendelman, "Piano man," the *Jerusalem Post* | JPost.com, April 30, 2016, , <http://www.jpost.com/Israel-News/Culture/Piano-man-452731#/>.

²⁰¹ *Ibid.*

had been changed by Ramon's mission even if it had ended in tragedy. People throughout the country, regardless of whether they knew him personally or not, have made it part of their mission to promote Ilan Ramon's legacy with the hope that one day another Israeli will take the steps to become an astronaut. Children across Israel say they dream of traveling to space, so with the right encouragement and opportunities provided by organizations such as the Ramon Foundation and the Israel Space Agency, they may in fact achieve this dream.

It is for reasons like this that Ilan Ramon's legacy has continued on and will do so for years to come because even fifteen years after his death, he is still an influential role model for his country's citizens. In the future, Israeli and Jewish astronauts will likely cite Ilan Ramon as a source of inspiration for their aspirations. Before Ramon's journey to space, the idea of an Israeli astronaut was considered to be a joke in the country. He proved that not only could an Israeli become an astronaut, but they could excel at it. Ilan Ramon was very much the embodiment of what the early Zionist settlers hoped their descendants would become. They hoped that the future residents of the land would grow to be innovative individuals who did not fear a challenge. They wanted the future Jews of their land would to become examples of these characteristics that the rest of the world would look up to and admire. Indeed, Ilan Ramon's story has been one that has inspired people from all corners of the world. As long as people in Israel and elsewhere work to keep his story alive, he will continue to inspire new astronauts for generations to come.

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